Introduction

The Veterans Health Administration (VHA) developed the Resource Usage Monitor (RUM) Package in order to obtain more accurate information regarding the current and future Veterans Health Information Systems and Technology Architecture (**V***IST***A**) system and **V***IST***A** option workload at the VA Medical Centers (VAMCs).

The purpose of this manual is to provide information about the Resource Usage Monitor (RUM) Package Version 1.0. This manual defines the use of this package as a resource to IRM staff responsible for capacity management functions at the site. It also highlights the use of the options that are available at the site.

Functional Description

Resource Usage Monitor (RUM) is a fully automated support tool developed by the Capacity Management (CM) team, which entails the daily capture of system and **V***IST***A** option workload information from participating sites. This workload data is then summarized on a weekly basis and is automatically transferred via network mail to the Capacity Management National Database.

The current version of the package is compatible with all current operating system platforms at the medical centers and has minimal impact on IRM support staff. Kernel Patch XU*8*107 installed Resource Usage Monitor (RUM) data collection routines for *DSM for OpenVMS* sites. A future Kernel patch will enable the collection of RUM data from *MSM-DOS* and *Caché for Windows NT* system platforms.

Installing the RUM Package software creates the collection process mechanism and other necessary components of the package. The fully automated data collection mechanism entails capturing all system and **V***IST***A** option workload specifics at the site into a temporary ^XTMP("KMPR") collection global. The collection mechanism is continuously monitoring each process on the system while trapping system and **V***IST***A** option workload data.

On a nightly basis, the data within the ^XTMP("KMPR") collection global is moved to the RESOURCE USAGE MONITOR file (#8971.1) and the temporary data within the ^XTMP("KMPR") global is purged. The nightly task also monitors the RESOURCE USAGE MONITOR file to ensure that only a maximum of three weeks worth of data is maintained at the site.

Every Sunday night, the information contained within the RESOURCE USAGE MONITOR file is compressed into weekly statistics. These weekly statistics are converted into an electronic mail message that is automatically transferred via network mail and merged into a National Capacity Management (CM) Database. The site also receives a summary of the system workload data in the form of an electronic turn-around message.

IRM staff utilizes the options that are available at the site to manage this package. IRM staff responsible for capacity management tasks at the site can use these options to review system workload trends. Additionally, the IRM staff can review specific workload information for any given **V***IST***A** option.

Use of the Software

Package Management

The Resource Usage Monitor (RUM) Package is managed by IRM staff through the *RUM Manager Menu* [KMPR RUM MANAGER MENU], which is located under the *Capacity Management* menu [XTCM MAIN]. The XTCM MAIN menu is found under the *Eve* menu and should be assigned to IRM staff member(s) who support(s) this package and other capacity management tasks.

This package utilizes the KMP-CAPMAN mail group, which can be edited with the *Capacity Management Mail Group Edit* [KMP MAIL GROUP EDIT] option, which is located under the *Capacity Management* menu [XTCM MAIN].

RUM Manager Menu

This section of the manual covers the *RUM Manager Menu* [KMPR RUM MANAGER MENU] that is located at the site. This is broken down by the individual options with a discussion of each option and examples of user interaction. This portion should be thought of and used as a reference guide to the options within the software.

Note: Kernel Patch XU*8*107 installed Resource Usage Monitor (RUM) data collection routines for *DSM for OpenVMS* sites. A future Kernel patch will enable the collection of RUM data from *MSM-DOS* and *Caché for Windows NT* sites.

```
STA      Status of RUM Collection [KMPR STATUS COLLECTION]
STR      Start RUM Collection [KMPR START COLLECTION]
STP      Stop RUM Collection [KMPR STOP COLLECTION]
RPT      RUM Reports ... [KMPR REPORTS MENU]
```

Status of RUM Collection
[KMPR STATUS COLLECTION]

This option displays the current status of the RUM collection routines. This option identifies whether RUM is currently running. Additionally, this option shows the reschedule frequency of the RUM Background Driver [KMPR BACKGROUND DRIVER] and whether the temporary ^XTMP("KMPR") collection global is currently present.

This status option will check to ensure that the RUM Background Driver [KMPR BACKGROUND DRIVER] has been scheduled to run every night. If the status option determines that the background task has not been scheduled properly, the status option will ask to queue the background task to run every night at 1 a.m. Selecting 'YES' will cause the KMPR BACKGROUND DRIVER option to be entered into the OPTION SCHEDULING file (#19.2) with a QUEUED TO RUN AT WHAT TIME entry of 'Tomorrow @ 1 a.m.' and a RESCHEDULING FREQUENCY of '1D' (i.e., every day).

Prompt/User Response:

```
                        Resource Usage Monitor Status
                                 Version 1.0

     The Resource Usage Monitor is currently running.

     The 'RUM Background Driver' [KMPR BACKGROUND DRIVER] is scheduled
     to run on NOV 24, 1998 @ 01:00 every 1 day.

     The temporary collection global (i.e., ^XTMP("KMPR")) is present
     on your system.


Press <RETURN> to continue:
```

Start RUM Collection
[KMPS START COLLECTION]

This option informs the Resource Usage Monitor (RUM) collection routines to begin collecting system and **V***IST***A** option workload data.

> Note: Kernel Patch XU*8*107 installed Resource Usage Monitor (RUM) data collection routines for *DSM for OpenVMS* sites. A future Kernel patch will enable the collection of RUM data from *MSM-DOS* and *Caché for Windows NT* sites.

You should first invoke the *Status of RUM Collection* [KMPR STATUS COLLECTION] option to ensure that the RUM Background Driver [KMPR BACKGROUND DRIVER] is scheduled to run every day at 1 a.m.

If the RUM Background Driver [KMPR BACKGROUND DRIVER] is not shown as being scheduled to run in the future, use the *Schedule/Unschedule Options* [XUTM SCHEDULE] option located under the *Taskman Management* menu to schedule the KMPR BACKGROUND DRIVER option to run every day at 1 a.m.

The Capacity Management (CM) team strongly suggests that this background driver be scheduled to run every day at 1 a.m. This background driver is the main mechanism by which the temporary ^XTMP("KMPR") global is purged and RESOURCE USAGE MONITOR file (#8971.1) is trimmed. Modification of the frequency and time may have adverse effects on the size of the temporary ^XTMP("KMPR") global and on the number of entries within the RESOURCE USAGE MONITOR file.

Prompt/User Response:

```
Do you want to start Resource Usage Monitor collection? YES// ?

Answer YES to start collecting Resource Usage Monitor data.

Do you want to start Resource Usage Monitor collection? YES//

          Resource Usage Monitor collection is started.
```

Stop RUM Collection
[KMPR STOP COLLECTION]

This option informs the Resource Usage Monitor (RUM) collection routines to stop collecting data.

Note: This option does not stop the RUM Background Driver [KMPR BACKGROUND DRIVER].

The background driver is the main mechanism by which the temporary ^XTMP("KMPR") global is purged and the RESOURCE USAGE MONITOR file (#8971.1) is trimmed. Therefore, the Capacity Management (CM) team **strongly** suggests that this background driver remain scheduled to run every day at 1 a.m.

Prompt/User Response:

```
Do you want to stop Resource Usage Monitor collection? YES// ?

Answer YES to stop collecting Resource Usage Monitor data.

Do you want to stop Resource Usage Monitor collection? YES//

          Resource Usage Monitor collection is stopped.
```

RUM Reports
[KMPR REPORTS MENU]

This menu contains various reports that can be generated from the system and **V***IST***A** option workload statistics accumulated from the Resource Usage Monitor (RUM) Package:

```
GAN      RUM Data for All Nodes (Graph) [KMPR GRAPH ALL NODES]
GSN      RUM Data by Date for Single Node (Graph)
                          [KMPR GRAPH HOURLY SINGLE NODE]
PDO      RUM Data for an Option [KMPR PRINT OPTION DATA]
PRU      Package Resource Usage [KMPR PRINT NODE PERCENT]
```

Note: Some of the reports can take awhile to generate. Users may wish to queue the printouts, if feasible.

RUM Data for All Nodes (Graph)
[KMPR GRAPH ALL NODES]

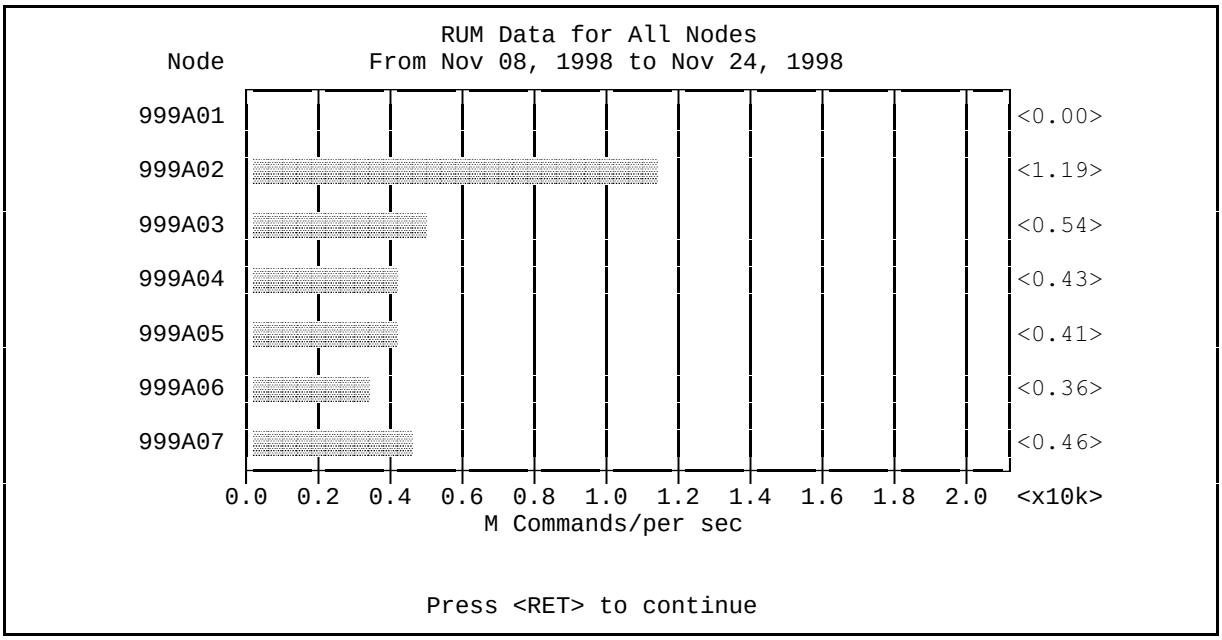
This option will display a graph of the selected system workload data element for all nodes. The graph gives a total amount for the selected data element over the selected time period.

Note: The granularity of the graphical output is representative of the actual workload amounts.

Prompt/User Response:

```
                              Data for All Nodes (Graph)

         This option displays data in a graphical format.  Please make
         note that this output is intended for comparison/trends only,
         and should not be used for detailed analysis.

     Select one of the following:

          1         CPU Time
          2         Elapsed Time
          3         M Commands
          4         GLO References
          5         DIO References
          6         BIO References
          7         Page Faults
          8         Occurrences

Enter Key Data Element for Searching RUM Data: 3  M Commands

Start with Date: 11/8/98//   (NOV 08, 1998)
  End with Date: 11/24/98//   (NOV 24, 1998)

   compiling data for: 11/8/1998.....11/9/1998...........11/10/1998.........
                       11/11/1998.....11/12/1998...........11/13/1998.........
```

RUM Data for All Nodes—Prompt/User Response (continued):



RUM Data by Date for Single Node (Graph)
[KMPR GRAPH HOURLY SINGLE NODE]

This option will display a graph of the selected system workload data element for a single node. The graph gives a total amount for the selected data element over the selected time period for the entire day.

> Note: The granularity of the graphical output is representative of the actual workload amounts.

Prompt/User Response:

```
                    RUM Data by Date for Single Node


         This option displays data in a graphical format.  Please make
         note that this output is intended for comparison/trends only,
         and should not be used for detailed analysis.

     Select one of the following:

          1         CPU Time
          2         Elapsed Time
          3         M Commands
          4         GLO References
          5         DIO References
          6         BIO References
          7         Page Faults
          8         Occurrences

Enter Key Data Element for Searching RUM Data: 3  M Commands

Start with Date: 11/8/98//   (NOV 08, 1998)
  End with Date: 11/24/98//   (NOV 24, 1998)

     Select one of the following:

          1         999A01
          2         999A02
          3         999A03
          4         999A04
          5         999A05
          6         999A06
          7         999A07

Select Node: 2  999A02

   compiling data for: 11/8/1998.....11/9/1998...........11/10/1998.........
                       11/11/1998.....11/12/1998...........11/13/1998.........
```

RUM Data by Date for Single Node—Prompt/User Response (continued):

```
                        RUM Data by Date for Node '999A07'
                         From Nov 08, 1998 to Nov 24, 1998
M Commands/per sec  <x10k>

      1.0_ ____________________________________
      0.9_|                    ▒                |
      0.8_|                    ▒   ▒            |
      0.7_|                    ▒   ▒            |
      0.6_|    ▒   ▒   ▒       ▒   ▒   ▒    ▒ ▒|
      0.5_|  ▒ ▒   ▒   ▒ ▒     ▒   ▒   ▒  ▒ ▒ ▒|
      0.4_|  ▒ ▒   ▒   ▒ ▒     ▒   ▒   ▒  ▒ ▒ ▒|
      0.3_|  ▒ ▒   ▒   ▒ ▒     ▒   ▒   ▒  ▒ ▒ ▒|
      0.2_|  ▒ ▒   ▒   ▒ ▒     ▒   ▒   ▒  ▒ ▒ ▒|
      0.1_|  ▒ ▒ ▒ ▒   ▒ ▒     ▒   ▒   ▒  ▒ ▒ ▒|
      0.0_|▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒|
 D          1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 a          1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 t          / / / / / / / / / / / / / / / / /
 e          8 9 1 1 1 1 1 1 1 1 1 2 2 2 2 2
            / / 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
            9 9 / / / / / / / / / / / / / / /
            8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
                8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

                                Press <RET> to continue
```

RUM Data for an Option
[KMPR PRINT OPTION DATA]

This option will display all the system workload data elements for a selected option over a given time period. The output lists the data elements per occurrence, as well as, the total amounts for the given time period.

Prompt/User Response:

```
                              RUM Data by Option


Select Option: ?
 Answer with OPTION NAME, or UPPERCASE MENU TEXT
 Do you want the entire 10206-Entry OPTION List? N  (No)

Select Option: DG REGISTER PATIENT          Register a Patient

Start with Date: 11/8/98//   (NOV 08, 1998)
  End with Date: 11/24/98//   (NOV 24, 1998)

Device: HOME//   Telnet

   ...compiling data...
```

RUM Data for an Option—Prompt/User Response (continued):

```
                    RUM Data for Option: DG REGISTER PATIENT
                                MEDICAL CENTER (999)
                           For Nov 08, 1998 to Nov 24, 1998

                                per Occurrence                Totals

CPU Time.................                0.23                 3,783.52
Elapsed Time.............               43.92                723,316.51
M Commands...............           10,282               169,315,779
GLO References...........            1,664                27,401,459
DIO References...........               75                 1,230,720
BIO References...........              141                 2,315,238
Page Faults..............                1                    20,023
Occurrences..............                                     16,468


Press RETURN to continue:
```

Package Resource Usage
[KMPR PRINT NODE PERCENT]

This option will display the statistics for a specified package namespace per computer node. The printout shows the system workload as a percent of the totals that the given package namespace was running as either an option, protocol, Remote Procedure Call (RPC), HL7 or background task.

Note: A future patch will allow the Resource Usage Monitor (RUM) package to obtain workload data for Remote Procedure Calls (RPCs) and HL7 protocols.

Prompt/User Response:

```
                          Package Resource Usage

  This option will display the package Resource Usage Monitor statistics.
  The printout summarizes the statistics of the options, protocols and
  tasks for a selected namespace as percentages.


Select Package Namespace (case sensitive): ?

This response can be free text.

Select Package Namespace (case sensitive): LR

Start with Date: 11/8/98//   (NOV 08, 1998)
  End with Date: 11/24/98//   (NOV 24, 1998)

Device: HOME//   Telnet

   ...compiling data...11/8/1998.....11/9/1998...........11/10/1998.........
                       11/11/1998.....11/12/1998...........11/13/1998.........
```

Package Resource Usage—Prompt/User Response (continued):

```
                          Package Resource Usage
                              MEDICAL CENTER
                    Node 999A01 from Nov 08, 1998 to Nov 24, 1998
                              'LR' Namespace

                      %          %          %          %          %       All Other
                   Options    Protocols    RPC        HL7      Tasks     Packages

CPU Time              0.0        0.0        0.0        0.0        0.0       100.0
Elapsed Time          0.0        0.0        0.0        0.0        0.0       100.0
M Commands            0.0        0.0        0.0        0.0        0.0       100.0
GLO References        0.0        0.0        0.0        0.0        0.0       100.0
DIO References        0.0        0.0        0.0        0.0        0.0       100.0
BIO References        0.0        0.0        0.0        0.0        0.0       100.0
Page Faults           0.0        0.0        0.0        0.0        0.0       100.0
Occurrences           0.0        0.0        0.0        0.0        0.0       100.0


                    Node 999A02 from Nov 08, 1998 to Nov 24, 1998
                              'LR' Namespace

                      %          %          %          %          %       All Other
                   Options    Protocols    RPC        HL7      Tasks     Packages

CPU Time              0.0        1.7        0.0        0.0        6.2       92.2
Elapsed Time          0.0        0.1        0.0        0.0        5.1       94.8
M Commands            0.0        1.4        0.0        0.0        5.3       93.3
GLO References        0.0        2.3        0.0        0.0        7.9       89.8
DIO References        0.0        0.3        0.0        0.0        4.5       95.1
BIO References        0.0        0.0        0.0        0.0        7.6       92.4
Page Faults           0.0        0.3        0.0        0.0        2.0       97.7
Occurrences           0.0       16.3        0.0        0.0       11.9       71.8


                    Node 999A03 from Nov 08, 1998 to Nov 24, 1998
                              'LR' Namespace

                      %          %          %          %          %       All Other
                   Options    Protocols    RPC        HL7      Tasks     Packages

CPU Time              0.0        1.2        0.0        0.0        8.2       90.6
Elapsed Time          0.0        0.0        0.0        0.0        4.1       95.8
M Commands            0.0        1.0        0.0        0.0        8.0       91.1
GLO References        0.0        1.5        0.0        0.0        9.8       88.7
DIO References        0.0        0.3        0.0        0.0        5.8       93.9
BIO References        0.0        0.0        0.0        0.0        7.3       92.7
Page Faults           0.0        0.1        0.0        0.0        1.4       98.5
Occurrences           0.0       13.0        0.0        0.0        9.4       77.6
```

Package Resource Usage—Prompt/User Response (continued):

```
                Node 999A04 from Nov 08, 1998 to Nov 24, 1998
                              'LR' Namespace

                     %          %          %          %          %       All Other
                  Options    Protocols     RPC        HL7      Tasks     Packages

CPU Time              2.2        5.5        0.0        0.0        0.0        92.3
Elapsed Time          3.7        2.7        0.0        0.0        0.0        93.6
M Commands            1.5        5.2        0.0        0.0        0.0        93.3
GLO References        1.6        4.9        0.0        0.0        0.0        93.5
DIO References        3.3        2.9        0.0        0.0        0.0        93.8
BIO References        1.8        0.8        0.0        0.0        0.0        97.4
Page Faults           0.7        0.1        0.0        0.0        0.0        99.1
Occurrences           0.7        8.0        0.0        0.0        0.0        91.4


                Node 999A05 from Nov 08, 1998 to Nov 24, 1998
                              'LR' Namespace

                     %          %          %          %          %       All Other
                  Options    Protocols     RPC        HL7      Tasks     Packages

CPU Time              2.5        2.7        0.0        0.0        0.0        94.8
Elapsed Time          2.5        1.1        0.0        0.0        0.0        96.4
M Commands            2.3        2.4        0.0        0.0        0.0        95.3
GLO References        2.2        2.4        0.0        0.0        0.0        95.4
DIO References        3.3        1.6        0.0        0.0        0.0        95.1
BIO References        1.3        0.3        0.0        0.0        0.0        98.4
Page Faults           0.5        0.0        0.0        0.0        0.0        99.4
Occurrences           0.4        4.6        0.0        0.0        0.0        95.0


                Node 999A06 from Nov 08, 1998 to Nov 24, 1998
                              'LR' Namespace

                     %          %          %          %          %       All Other
                  Options    Protocols     RPC        HL7      Tasks     Packages

CPU Time              2.6        6.4        0.0        0.0        0.0        91.0
Elapsed Time          4.2        3.0        0.0        0.0        0.0        92.8
M Commands            2.0        6.0        0.0        0.0        0.0        92.0
GLO References        2.0        5.7        0.0        0.0        0.0        92.2
DIO References        4.2        3.5        0.0        0.0        0.0        92.3
BIO References        2.0        0.9        0.0        0.0        0.0        97.1
Page Faults           1.1        0.2        0.0        0.0        0.0        98.8
Occurrences           0.8        9.2        0.0        0.0        0.0        89.9
```

Package Resource Usage—Prompt/User Response (continued):

Node 999A07 from Nov 08, 1998 to Nov 24, 1998
'LR' Namespace

	% Options	% Protocols	% RPC	% HL7	% Tasks	All Other Packages
CPU Time	1.6	3.6	0.0	0.0	0.0	94.8
Elapsed Time	3.1	1.7	0.0	0.0	0.0	95.2
M Commands	1.1	3.3	0.0	0.0	0.0	95.6
GLO References	1.1	3.0	0.0	0.0	0.0	95.9
DIO References	2.8	2.1	0.0	0.0	0.0	95.1
BIO References	1.6	0.5	0.0	0.0	0.0	97.8
Page Faults	1.0	0.1	0.0	0.0	0.0	98.9
Occurrences	0.5	5.8	0.0	0.0	0.0	93.7

RUM Background Driver
[KMPR BACKGROUND DRIVER]

This option is not assigned to any menu. This option is scheduled through TaskMan to start the Resource Usage Monitor (RUM) Package's background driver routine.

This option should be rescheduled with the *Schedule/Unschedule Options* [XUTM SCHEDULE] under the *TaskMan Management* menu for every day at 1 a.m. to ensure that the temporary ^XTMP("KMPR") global is purged and the RESOURCE USAGE MONITOR file (#8971.1) is trimmed. Modification of the frequency and time may have adverse effects on the size of the temporary ^XTMP("KMPR") global and on the number of entries within the RESOURCE USAGE MONITOR file.

> Note: The RUM Background Driver [KMPR BACKGROUND DRIVER] option is marked for SPECIAL QUEUING with 'Persistent'. This option is marked for Persistent so Taskman will mark the option as a persistent task to be restarted if it stops unexpectedly.

The example below shows a typical display when using the *Schedule/Unschedule Options*.

Prompt/User Response:

```
Select OPTION to schedule or reschedule: KMPR BACKGROUND DRIVER <RET>   (R)


Edit Option Schedule
    Option Name: KMPR BACKGROUND DRIVER
    Menu Text: RUM Background Driver                  TASK ID: 3883
_____________________________________________________________________

  QUEUED TO RUN AT WHAT TIME: NOV 24,1998@01:00

DEVICE FOR QUEUED JOB OUTPUT:

 QUEUED TO RUN ON VOLUME SET:

      RESCHEDULING FREQUENCY: 1D

             TASK PARAMETERS:

            SPECIAL QUEUEING: Persistent


COMMAND:                      Press <PF1>H for help    Insert
```

Glossary

BIO reference	Buffered I/O reference. A system workload data element that gives the number of times that a buffered access has been called because of M routine code execution. Terminals and printers are normally considered to be a buffered device within the M environment.
Capacity management	The process of assessing a system's capacity and evaluating its efficiency relative to workload in an attempt to optimize system performance.
CPU Time	A system workload data element that gives the amount of time that the processor has spent executing M routine code.
Data element	A statistical unit by which to measure either system or **V***IST***A** option workload. Eight data elements have been defined: CPU time, elapsed time, M commands, GLO references, DIO references, BIO references, page faults and number of occurrences.
DIO reference	Disk (Direct) I/O reference. A system workload data element that gives the number of times that a disk access has been requested because of M routine code execution.
Elapsed Time	A system workload data element that gives the amount of actual time that has passed while executing M routine code.
GLO reference	Global reference. A system workload data element that gives the number of times that a global variable name has been called because of M routine code execution.
M commands	A system workload data element that gives the number of distinct commands that have been executed while executing M routine code.
Number of occurrences	A system workload data element that gives a total measure of the number of **V***IST***A** option executions.

Page faults	A system workload data element that gives the number of times that a job had to use non-physical (i.e., paged) memory.
RUM	Resource Usage Monitor. A fully automated support tool developed by the Capacity Management (CM) team, which entails the daily capture of system and **V***IST***A** option workload information from participating sites.
Turn-around message	The mail message that is returned to the KMP-CAPMAN mail group detailing the system workload change over the previous reported session.

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RESOURCE USAGE MONITOR
RUM PACKAGE

USER MANUAL

Version 1.0

December 1998

Department of Veterans Affairs
V*IST***A** Software Development
Office of Chief Information Officer

Preface

The Resource Usage Monitor (RUM) package is intended to be utilized by IRM staff responsible for the capacity management functions at their facility. The RUM Package allows the facility to review system and **V***IST***A** option workload information.

The RUM Package is strongly dependent on the site to schedule and run the background task on a regular basis. Menus and options are provided locally at the site to allow IRM staff to accomplish and monitor this task.

The collection task obtains system and **V***IST***A** option information from the site and automatically transfers this data via network mail to the Capacity Management National Database.

Table of Contents

Orientation

How to Use this Manual

Throughout this manual, advice and instructions are offered regarding the use of the Resource Usage Monitor (RUM) Package V. 1.0 software including the functionality it provides for Veterans Health Information Systems and Technology Architecture (**V*IST*A)**.

There are no special legal requirements involved in the use of the Resource Usage Monitor (RUM) Package V. 1.0 software.

This manual uses several methods to highlight different aspects of the material:

- Descriptive text is presented in a proportional font (as this is).
- "Snapshots" of computer online displays (i.e., roll-and-scroll dialogues) and computer source code are shown in a non-proportional font and enclosed within a box.

  NOTE: Author's comments within these snapshots (if any) are displayed in italics or as "callout" boxes (callout boxes refer to labels or descriptions, usually enclosed within a box, which point to specific areas of a displayed image). User's responses to online prompts will be boldface.

- All uppercase is reserved for the representation of M code, variable names, or the formal name of options, field and file names, and security keys (e.g., the XUPROGMODE key).

Assumptions About the Reader

This user manual is written with the assumption that the reader is familiar with the **V*IST*A** computing environment (e.g., Kernel Installation and Distribution System [KIDS]).

No attempt is made to explain how the overall **V*IST*A** programming system is integrated and maintained. Such methods and procedures are documented elsewhere. We suggest you look at the various VA home pages on the World Wide Web for a general orientation to **V*IST*A**. For example, check out the following web sites:

http://www.va.gov/vama.htm#DHCP

http://www.vista.med.va.gov/

This user manual does provide, however, an overall explanation of the Resource Usage Monitor (RUM) Package V. 1.0 software.

Readers who wish to learn more about the Resource Usage Monitor (RUM) Package V. 1.0 software should consult the following:

- *Resource Usage Monitor (RUM) Package V. 1.0 Installation Guide*
- *Resource Usage Monitor (RUM) Package V. 1.0 Technical Manual*
- The Capacity Management Home Page (for more information on Capacity Management) at the following temporary web address:

  http://vaww.va.gov/capman/index.htm

  This site contains additional information and documentation.

Resource Usage Monitor (RUM) Package V. 1.0 software documentation is made available online, on paper, and in Adobe Acrobat Portable Document Format (.PDF). The .PDF documents must be read using the Adobe Acrobat Reader (i.e., ACROREAD.EXE), which is freely distributed by Adobe Systems Incorporated at the following web address:

http://www.adobe.com/

NOTE: *For more information on the use of the Adobe Acrobat Reader, please refer to the "Adobe Acrobat Quick Guide" at the following web address:*

http://www.vista.med.va.gov/softserv/infrastr.uct/acrobat/index.html